

REMARKS

At the outset, Applicants thank the Examiner for the thorough review and consideration of the subject application. The Non-Final Office Action dated September 4, 2003, has been received and its contents carefully noted. Claims 1-2 have been amended, these claims have not been narrowed for reasons related to patentability. Claims 10-15 are newly added, no new matter has been added. Accordingly, claims 1-15 are currently pending in this application.

In the Office Action the Examiner objected to the specification as containing informalities, Applicants respectfully submit that the specification has been amended to correct the informalities and submit no new matter has been added. Additionally, the drawings have been amended in order to correct some informalities.

Additionally, the Examiner rejected claims 1-4 and 6-7 under 35 U.S.C. § 102(e) as being allegedly anticipated by U.S. Patent No. 6,436,221 issued to Chang et al. ("Chang"); and claim 5 was rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Chang in view of U.S. Patent No. 6,534,723 issued to Asai et al. ("Asai"); claim 8 was rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Chang; and claim 9 was rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Chang in view of U.S. Patent No. 6,013,238 issued to Murata et al. ("Murata"). Applicants respectfully traverse these rejections and reconsideration is hereby requested.

Rejections Under 35 U.S.C. § 102

Claims 1-4 and 6-7 were rejected under 35 U.S.C. § 102(e) as being allegedly anticipated Chang. Applicants respectfully traverse these rejections and reconsideration is hereby requested.

Claim 1 is allowable over the cited references in that claim 1, recites a combination of elements including, for example, “hardening the emitter surface treatment agent; and removing the hardened emitter surface treatment agent from the substrate such that the carbon-based material contained in the emitter can be exposed.” None of the cited references either singly or in combination teaches or suggests at least features.

The Examiner asserts Chang discloses:

Depositing an emitter surface treatment agent on the substrate to cover the emitter (adhesive film, see abstract), hardening the emitter surface treatment agent (sintering, column 3, line 63), and removing the hardened emitter surface treatment agent from the substrate such that the carbon based material contained in the emitter can be exposed, see columns 3-4, lines 49-67, and 1-5.

(Office Action at 2-3.)

In contradistinction to the Examiner’s assertions, Chang discloses the following:

[T]he CNT layer formed is carried out as aforementioned background of the invention. After screen print, the conductive line array of about 50-150 μm in interval and 150-300 μm each in width is formed. Each of the field pixel is about 0.02-0.09 mm^2 are formed. The soft baked temperature is about 50-200 $^{\circ}\text{C}$ to remove away organic volatile solvent. ***A taping process is performed by using adhesive film such as tape with adhesive material thereon or polymer film with static electrical attractive material on the CNT substrate through a laminator to closely attach on the CNT layer and the adhesive film or the polymer film are pulled up and removed away.*** The process can remove some badly attached CNT. Some of the CNT buried in the CNT layer is also pull up to a proper direction.

Thereafter, a sintering process at a temperature of about 350-550 $^{\circ}\text{C}$, is performed.

Chang at col. 3, lines 49-64(emphasis added).

Accordingly, Chang does not teach or suggest, for example, “hardening the emitter surface treatment agent” as required by claim 1. In contrast, to the Examiner’s assertions Chang teaches the addition of an adhesive film and removal of the adhesive film. However, Chang does not teach or suggest the required elements of claim 1, as discussed above. Accordingly, Applicants respectfully request withdrawal of the rejection as a *prima facie* case of anticipation has not been established and submit that claim 1 and claims 2-9, which depend from claim 1 are allowable.

Rejections Under 35 U.S.C. § 103

Claim 5 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chang in view of Asai. Applicants respectfully traverse these rejections and reconsideration is hereby requested.

Claim 5 by virtue of its dependence from claim 1 includes all the limitations of claim 1. For reasons as discussed above, with respect to the rejection under 35 U.S.C. § 102(e), Chang does not teach or suggest all the limitations of claim 1. Additionally, Asai fails to cure the deficiencies of Chang, as it does not teach or suggest, for example, “hardening the emitter surface treatment agent; and removing the hardened emitter surface treatment agent from the substrate such that the carbon-based material contained in the emitter can be exposed” as required by claim 1. Accordingly, claim 5 is allowable by virtue of its dependence from claim 1.

Claim 8 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chang. Applicants respectfully traverse these rejections and reconsideration is hereby requested.

Claim 8 by virtue of its dependence from claim 1 includes all of the limitations of claim 1. For reasons as discussed above, with respect to the rejection under 35 U.S.C. § 102(e), Chang does not teach or suggest for example, “hardening the emitter surface treatment agent; and removing the hardened emitter surface treatment agent from the substrate such that the carbon-based material contained in the emitter can be exposed” as required by claim 1. Accordingly, claim 8 is allowable by virtue of its dependence from claim 1.

Claim 9 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chang in view of Murata. Applicants respectfully traverse these rejections and reconsideration is hereby requested.

Claim 9 includes all the limitations of claim 1 by virtue of its dependence from claim 1. For reasons as discussed above, with respect to the rejection under 35 U.S.C. § 102(e), Chang does not teach or suggest all the limitations of claim 1. Mura fails to cure the deficiencies of Chang, as it does not teach or suggest, for example, “hardening the emitter surface treatment agent; and removing the hardened emitter surface treatment agent from the substrate such that the carbon-based material contained in the emitter can be exposed” as required by claim 1. Accordingly, claim 9 is allowable by virtue of its dependence from claim 1.

Newly Added Claims

Claim 10 is allowable over the cited references in that claim 10, recites a combination of elements including, for example, “heating the surface treatment agent for forming a treatment film; and removing at least a portion of the treatment film.” None of the cited references either

singly or in combination teaches or suggests at least features. Accordingly, Applicants respectfully submit that claim 10 and claims 11-15, which depend from claim 10 are allowable.

CONCLUSION

Applicants believe that a full and complete response has been made to the pending Office Action and respectfully submit that all of the stated objections and grounds for rejection have been overcome or rendered moot. Accordingly, Applicants respectfully submit that all pending claims are allowable and that the application is in condition for allowance.

Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact the Applicant's undersigned representative at the number below to expedite prosecution.

Prompt and favorable consideration of this Reply is respectfully requested.

Respectfully submitted,



Scott J. Hawranek
Reg. No. 52,411

Hae-Chan Park
Reg. No. 50,114

Date: November 4, 2003

McGuireWoods LLP
1750 Tysons Boulevard
Suite 1800
McLean, VA 22102-4215
Tel: 703-712-5365
Fax: 703-712-5280

\\COM\221920.1